

# Description of a new species of *Branchinella* Sayce from Sambhar Lake, India (Crustacea- Branchiopoda-Anostraca)<sup>1</sup>

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(With five-text-figures)

*Branchinella sambhariana* n. sp. (Anostraca) from Sambhar lake, India has been described. It differs from other species of this lake in having a conspicuous outgrowth with a pointed tip, in having 4-7 branches of a frontal appendage which is smaller than the second antenna, and in lacking a secondary branch on the lobe or protuberance of apical joints.

The present paper records and describes a new species of the genus *Branchinella* found in the Sambhar lake in Rajasthan.

## ***Branchinella sambhariana* sp. nov.<sup>3</sup>**

(Figs. 1, 2)

**Male:** Generally resembles *Br. kugenumaensis* Ishikawa, *Br. ornata*, and *Br. biswasi*. The body is broad and thick. The cercopods are of the same length as the last abdominal segment and telson. 1st Ant. are longer than the basal segments of II Ant. II Ant. have short and thick basal segments which are fused with the basal part of the frontal appendages. The inner distal margin of the basal segment of II Ant. gives rise to a conspicuous serrated outgrowth with a pointed tip. The apical segments are longitudinally striated and are without branches. The frontal appendages are smaller than II Ant. Each appendage has 4-7 branches which have a rich armature of spines. The apex of each branch is tipped with two spines (Figs. 1, 2).

II max. resemble those of generic type.

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<sup>1</sup> Accepted October 1973.

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<sup>3</sup> Name after the locality, Sambhar lake.

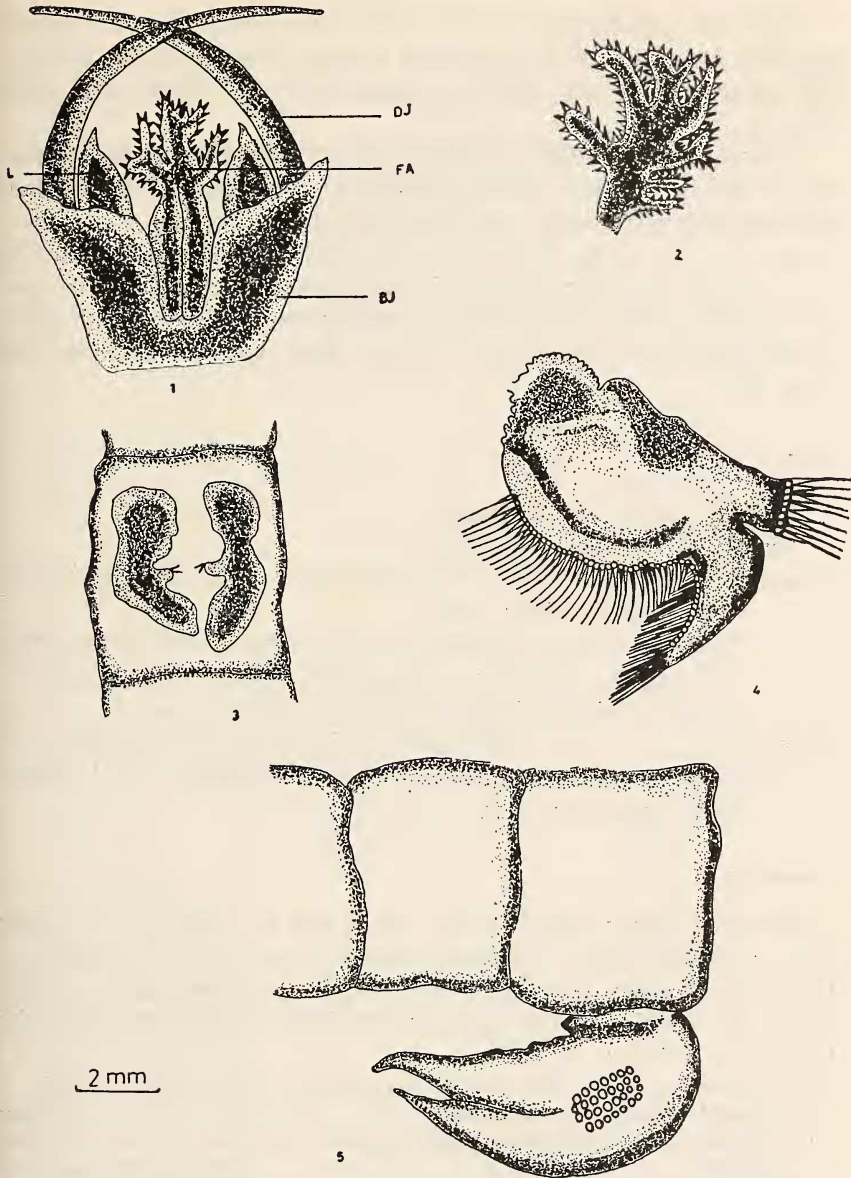


Fig. 1. Second antenna with frontal appendages of *Br. sambhariana* (BJ—Basal Segment; DJ—Distal Segment; FA—Frontal Appendage; L—Conspicuous outgrowth).

Fig. 2. Frontal appendages of *Br. sambhariana* showing armature of spines of branches.

Fig. 3. Male genital organs of *Br. sambhariana* showing protruded penes with a pair of short median spines.

Fig. 4. Toracic appendage of *Br. sambhariana* showing praecipodite sparsely serrated.

Fig. 5. Ovisac of female *Br. sambhariana*.

Legs have appearance characteristic of the genus. The exopodites are quite long with their tips always reaching beyond the endopodite. The praepodites are sparsely serrated and are without any notch (Fig. 4).

Penes have no triangular laminae and are retractable under the surface of the body. Their basal parts which have a pair of short spines near the base, are usually protruded (Fig. 3).

**Female:** The shape of the trunk, abdomen and cercopods as in the male. 1st Ant. as long as head. It is linguate and beset with a fair number of sensory hairs. Ovisac is short, reaching only slightly over 4th abdominal segment and bifurcating into two small lobes at its distal end (Fig. 5).

*Size:*

Male 12 to 22 mm in length.

Female 13 to 26 mm in length.

*Types:* Holotype (1 ♀ 1 ♂) in the Department of Zoology, University of Rajasthan, Jaipur, India.

Paratypes (many specimens of both sexes) in the Department of Zoology, University of Rajasthan, Jaipur, India and 2 ♀ ♀ 2 ♂ ♂ in British Museum (Natural History), London.

*Type-Locality:* Sambhar lake, Gudha, Jaipur District, Rajasthan, India, collected by the author on 16th, September, 1957 and on 29th, September 1964.

*Remarks:*

*Br. sambhariana* resembles *Br. ornata* and *Br. biswasi* of this lake and *Br. kugenumaensis* Ishikawa reported from East Asia (Ishikawa 1894; Ueno 1926; Hsu 1933; Shen 1933) and from India (Linder 1941). The position of this species in the key of identification (Linder 1941) is as follows:

- IA Basal joints of II Ant. with a distal outgrowth set with branches or both.
- a. Frontal appendages twice bifid ..... *ondogue*
  - aa. Frontal appendages with three secondary branches on each primary branch ..... *kugenumaensis, chaudenui*
- IAA Basal joints of II Ant. with a distal serrated outgrowth with a pointed tip and without any branch or spine ..... *sambhariana*

*Branchinella sambhariana* differs from other *Branchinella* species of this lake in having a conspicuous outgrowth with a pointed tip. 4-7 branches of a frontal appendage which is smaller than the second antenna and in lacking a secondary branch on the lobe or protuberance of a apical joints (Table ).

TABLE

COMPARISON OF THREE SPECIES OF THE GENUS *Branchinella* FOUND IN THE SAMBHAR LAKE

| <i>Br. ornata</i>                                                                                                                                  | <i>Br. biswasi</i>                                                                                       | <i>Br. sambhariana</i>                                                                                           |
|----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| <i>II Ant.</i>                                                                                                                                     |                                                                                                          |                                                                                                                  |
| 1. Basal segments are united at the base.                                                                                                          | 1. Basal segments are united at the base.                                                                | 1. Basal segments are fused at the base with the basal part of the frontal appendages.                           |
| 2. Finger shaped outgrowth at the base of the apical segment.                                                                                      | 2. Finger shaped outgrowth at the base of the apical segment.                                            | 2. Conspicuous serrated outgrowth with a pointed tip projects from the inner distal margin of the basal segment. |
| <i>Frontal appendage</i>                                                                                                                           |                                                                                                          |                                                                                                                  |
| 1. Longer than II Ant.                                                                                                                             | 1. Longer than II Ant.                                                                                   | 1. Smaller than II Ant.                                                                                          |
| 2. 5-6 branches with small finger like ventral chitinous formations.                                                                               | 2. 4-8 branches irregularly arranged on each side with scattered spicules more profuse towards the apex. | 2. 4-7 branches which have a rich armature of spines. The apex of each appendage is tipped with two spines.      |
| <i>Thoracic appendage</i>                                                                                                                          |                                                                                                          |                                                                                                                  |
| 1. Endites 3-5 of the appendages have 2, 2, 1 anterior setae respectively except the first pair which has respectively 4, 5, and 1 anterior setae. | 1. Endites 3-5 of all appendages have 2, 2, 1 anterior setae respectively.                               | 1. Endites 3-5 of all appendages have 2, 2, 1 anterior setae respectively.                                       |
| 2. Praeepipodites with distinct notch about midway along its border.                                                                               | 2. Praeepipodites non-serrated without any notch.                                                        | 2. Praeepipodites sparsely serrated without any notch.                                                           |
| <i>Penis</i>                                                                                                                                       |                                                                                                          |                                                                                                                  |
| 1. It has a triangular outgrowth or lamina with spines on the distal part.                                                                         | 1. It has a triangular lamina with a small wart-shaped armature of spines.                               | 1. Basal part usually protruded; with a pair of short spines near the base.                                      |

The genus *Branchinella* has worldwide distribution and its various species are found in fresh as well as in salt water lakes. Nineteen species of *Branchinella* are confined to Australia, one to the eastern and southern parts of Asia (*Br. kugenumaensis*), two to India (*Br. biswasi*, and *Br. sambhariana*), two to Africa (*Br. chaudenui*, and *Br. ondongue*) and one to Europe and Africa north of Sahara (*Br. spinosa*).

I wish to record my deep sense of gratitude to Dr. J. P. Harding, British Museum (Natural History), London and to Dr. F. Linder, Uppsala for examining the material and for their critical comments.

#### REFERENCES

- HSU, F. (1933): The Anostraca of Nanking and its vicinity. *Contr. Biol. Lab. Sc. Soc. China.* 9:9-15.
- LINDER, F. (1941): Contributions to the morphology and the taxonomy of the *Branchiopoda-Anostraca*. *Zool. Bidrag. Uppsala* 20:101-302.
- SHEN, C. J. (1933): On two species of Chinese Branchiopoda of the family Chirocephalidae. *Bull. of the Fan. Mem. Inst. Biol.* 4:1-18.
- UENO, M. (1926): The fresh water Branchiopod of Japan. *I. Mem. Coll. Sci. Imp. Univ., B,* 2:5-45.